GIVING SUBCUTANEOUS BOLUS MEDICATION FOR SYMPTOM MANAGEMENT IN PALLIATIVE CARE

Effective pain and symptom management in the palliative patient is an important part of quality end of life care. When the oral route is unavailable, the subcutaneous (SC) route is the preferred method of drug administration. Intravenous (IV) injections should be avoided because they are invasive and no more effective than the subcutaneous route. Intramuscular injections should be avoided, as they are painful, particularly in patients who are cachectic.
Note: The SC route will not give better analgesia than the oral route unless there is a problem with absorption or administration.

Common indications for use are:

- dysphagia
- decreased level of consciousness
- intestinal obstruction
- severe nausea and vomiting
- agitated delirium
- poor absorption of oral medications
- severe oral lesions

Why is subcutaneous administration preferable to intravenous?

- cannula insertion is less painful
- drugs are more slowly absorbed and the plasma concentration levels appears more constant resulting in less side effects such as nausea and vomiting, drowsiness
- enables patient care to be effectively managed at home (or residential care)

The subcutaneous route therefore provides:

- convenient and effective symptom management for patients who are unable to take medications orally - either through bolus injections (eg: while titrating pain medications) or via continuous infusion
- a convenient and effective route for breakthrough medications when patients are receiving continuous subcutaneous infusions

Choice of Cannula

The two subcutaneous cannula devices that should be used are the Saf-t-intima™ cannula (for continuous infusion) and the Insuflon® cannula (bolus injections). Both have a soft flexible cannula, can be inserted by nursing staff and can be left in safely for 72 hours or longer if no redness/inflammation and the site is viable **(sites may last 7 days or longer in patients with life limiting illness).** If a patient has a continuous infusion running via a Saf-t-intima™ cannula and requires bolus breakthrough medications an Insuflon® cannula should also be inserted.

Rationale for choice:

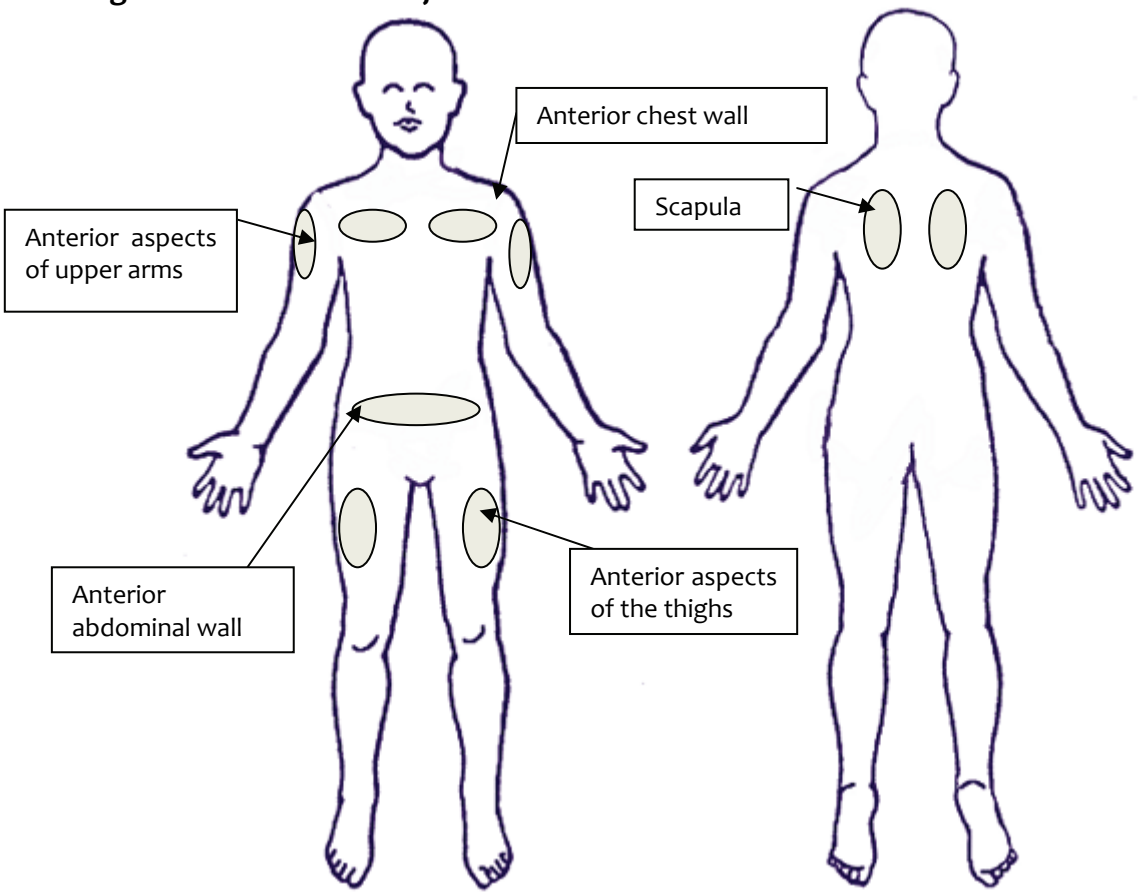
- Site reactions are less common
- Insertion is less traumatic
- Needle stick injury is reduced to patient and staff
- Less expensive than alternatives
- Can remain in situ for longer than other devices

See fact sheets with devices for insertion details.

Acceptable SC cannula insertion sites

- Anterior chest wall (preferred as easily visible and not compromised if patient lying on their sides)
- Anterior aspect of the upper arms (this can be uncomfortable if the patient lying on their side)
- Anterior aspect of the thigh or anterior abdominal wall (this however necessitates the patient being uncovered for site observation)
- The scapula if the patient is distressed and/or agitated

Diagram: Subcutaneous injection sites



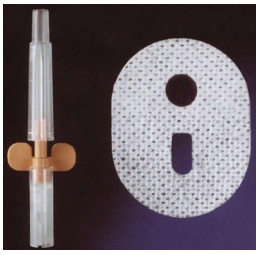
If a local reaction occurs, the cannula should be resited using a fresh cannula and administration set. Ensure the patient has a fourly observation chart completed, of the site (checking erythema, pain or swelling) and the infusion and pump (if present)

Sites Not Suitable for Injection

- Skin folds and breast tissue
- Directly over a tumour site
- Lymphoedematous limb or any area of oedematous tissue – absorption may be reduced
- The abdominal wall if ascites is present
- Bony prominences – little SC tissue, absorption reduced
- Previously irradiated skin – skin may be sclerosed, poor blood supply for absorption
- Sites near a joint – uncomfortable, increased risk of displacement
- Infected, broken or bruised skin

Important note: The maximum volume of a bolus subcutaneous injection is 2 ml: above this volume, the injection will be painful for the patient and absorption may be compromised.

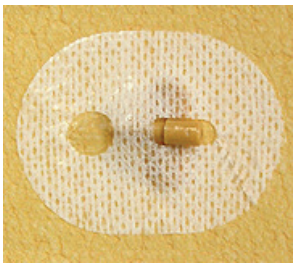
Giving Bolus medications <u>via Insuflon®:</u>



The unique aspect of the Insuflon® is that it does **NOT** require a flush after inserting the device or instilling medication. A minute amount of medication is left in the cannula following injection through the membrane. Therefore it is important to only instil medications that are compatible –(see compatibility chart in the Palliative Care Clinical Guidelines)

- Draw up charted medication/s. No diluent is required.
- **Remember** maximum volume of injection must not exceed 2 mls – if a larger volume is to be given then another site must be accessed
- To access the device, cleanse the self-sealing membrane for 30 seconds and allow to dry
- Access membrane with syringe and 26 gauge needle and inject slowly
- **DO NOT** flush

As the membrane on the insuflon is self healing it can be accessed for at least 75 injections.



<u>via Saf-T-Intima™:</u>

(It is preferable to use an insuflon for boluses, however they can be given via Saf-T-Intima™ if an insuflon is not available).

1. If continuous subcutaneous medication infusion is running – any breakthrough medications charted will be compatible with the medications running continuously
    a. Draw up charted medication. This does **not** need any diluent added
    b. Inject through sidearm port slowly
    c. **DO NOT** turn off the continuous infusion and **DO NOT** flush before or after
    d. If incompatible drugs are being used, a 2nd Saf-t-intima™ should be inserted

2. If bolus being given through Saf-t-intima™ with **no** infusion running
    a. Draw up charted medication/s. No diluent is required.
    b. Inject medication/s through sidearm port slowly
    c. Flush slowly with **0.2mls** of saline after medications given (the BD saf-t-intima cannula has a dead space of 0.2mls)
    d. If injecting multiple medications, check for compatibility. If the drugs are incompatible, a 2nd Saf-t-intima™ should be inserted

Breakthrough medications are those boluses that are being given as "top-up" doses in addition to regularly prescribed doses (eg those being given by infusion). Before discontinuing the SC route and removing the cannula, symptoms must be well controlled and the patient able to tolerate oral medications.

Note: It is common in Palliative care to use licensed medicines for an unlicensed indication, route or dose. Such use is well supported by experience in clinical practice and there is a supportive document on the Palliative Care intranet site, entitled ***'The Use of Unapproved Medicines in Palliative Care'*** http://intraweb.cdhb.local/manuals/handbooks/palliative-care/index.htm

Cyclizine must not be given as a subcutaneous bolus as it can cause tissue necrosis – it CAN be administered via subcutaneous infusion but should be well diluted with WATER

The commonly used drugs listed below **MUST NOT** be given by the SC route as they may cause tissue necrosis:

- Antibiotics
- Diazepam
- Chlorpromazine
- Prochlorperazine (stemetil)

If you have any concerns please contact the Palliative Care Team.

References

Dickman A., Scheider J., Varga J (2005) 2nd Ed. Syringe Driver handbook Oxford University Press Oxford

Twycross R., Wilcock A., Charlesworth S., Dickman A. (2003) 2nd Ed. Palliative Care Formulary, Radcliffe Medical Press, Oxford

Watson M., Lucas C., Hoy A., Back I. (2005) Oxford Handbook of Palliative Care, Oxford University Press, Oxford

NHS Greater Glascow and Clyde. Guidelines for the Use of Subcutaneous Medications in palliative Care for Adults – Primary Care and Hospices